IN THE CLAIMS:

Claim 1 (Currently Amended) A semiconductor device having a photo diode comprising:

a first conductivity type first semiconductor layer;

a first conductivity type second semiconductor layer disposed on said first conductivity type first semiconductor layer; and

a second conductivity type semiconductor layer formed at a surface layer portion of said first conductivity type second semiconductor layer;

wherein said first conductivity type first semiconductor layer comprises a surface impurity concentration greater than that of said first conductivity type second semiconductor layer; and

wherein when an inverse biases are bias of a predetermined amount is applied to a junction of said first conductivity type second semiconductor layer and said second conductivity type semiconductor layer, a depletion layer is spread to a region between a first predetermined amount and a second predetermined amount in a depth direction from a surface of said second conductivity type semiconductor layer, such that a sensitivity of said photo diode to light of a first wavelength and a sensitivity of light of second wavelength, which is different from said first wavelength, are made substantially the same.

Claim 2 (Canceled)

Claim 3 (Currently Amended) A semiconductor device as set forth in claim 1, wherein said the first predetermined amount is 3 μm and said the second predetermined amount is 6 μm.

Claim 4 (Currently Amended) A semiconductor device as set forth in claim 1, wherein said the first predetermined amount is 2 μm and said second predetermined amount is 7 μm.

Claim 5 (Canceled)

4

Claim 6 (Currently Amended) A semiconductor device as set forth in claim 1, wherein said first conductivity type first semiconductor layer is a first conductivity type substrate, and ~~said~~ the surface impurity concentration of ~~the~~ said first conductivity type substrate is at least $1 \times 10^{17}/cm^3$.

Claim 7 (Canceled)

Claim 8 (Currently Amended) A semiconductor device as set forth in claim 1, wherein ~~said~~ the first wavelength is 780 nm and ~~said~~ the second wavelength is 650 nm.

Claim 9 (Canceled)

Claim 10 (Previously Presented) A semiconductor device having a photo diode comprising:

a three layer structure including:

a p-type semiconductor substrate having a surface impurity concentration ranging from about $1 \times 10^{17}/cm^3$ to $1 \times 10^{19}/cm^3$;

a p-type semiconductor layer having an impurity concentration of about $5 \times 10^{13}/cm^3$ and formed on said p-type semiconductor substrate; and

an n-type semiconductor layer having an impurity concentration of about $1 \times 10^{15}/cm^3$ and formed on said p-type semiconductor layer;

wherein an end face of a depletion layer on a side of said p-type semiconductor substrate and a surface layer of said p-type semiconductor layer are within no more than a predetermined distance when inverse biases are applied to said p-type semiconductor layer and said n-type semiconductor layer, such that a sensitivity of said photo diode to light of a first wavelength and a sensitivity of light of a second wavelength, which is different from said first wavelength, are made substantially the same.

5

Claim 11 (Currently Amended) A semiconductor device having a photo diode comprising:

a first conductivity type first semiconductor layer;

a first conductivity type second semiconductor layer disposed on said first conductivity type first semiconductor layer; and

a second conductivity type semiconductor layer formed at a surface layer portion of said first conductivity type second semiconductor layer;

wherein said first conductivity type first semiconductor layer comprises a surface impurity concentration greater than that of said first conductivity type second semiconductor layer; and

wherein when inverse biases are applied to said first conductivity type second semiconductor layer and said second conductivity type semiconductor layer, an end face of a depletion layer on a side of said first conductivity type first semiconductor layer, and a surface layer of said first conductivity type first semiconductor layer are brought within no more than 3 μm, forming a space layer, such that a sensitivity of said the photo diode to light of a first wavelength and a sensitivity of light of a second wavelength, which is different from said the first wavelength, are made substantially the same.

Claim 12 (New) A semiconductor device as set forth in claim 1, wherein the predetermined amount of bias applied is about 2.5V.